

CLAIMS:

1. X-ray detector (10) with detector elements (1, 11) arranged in a layer, wherein every detector element (1, 11) comprises a sensor unit (5) and a processing circuit (4) coupled thereto, and wherein a shielding (3, 13) of variable shielding effectiveness is disposed in front of the processing circuit (4).

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2. X-ray detector (10) according to claim 1, characterized in that the shielding (3, 13) has a variable effective thickness (d1, d2).

3. X-ray detector according to claim 1, characterized in that a scintillator 10 unit (2, 12) is disposed in front of each sensor unit (5).

4. X-ray detector according to claim 3, characterized in that the scintillator unit (2, 12) and the shielding (3, 13) are arranged in a gapless way in a common layer.

15 5. X-ray detector according to claim 2, characterized in that the shielding is formed as a section (3, 13).

6. X-ray detector according to claim 5, characterized in that the section consists of a spatially shaped strip (3).

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7. X-ray detector according to claim 5, characterized in that the section (3) is L-shaped.

25 8. X-ray detector according to claim 5, characterized in that the section (13) is trapezoidal or triangular.

9. X-ray detector according to claim 1, characterized in that material of the shielding (3, 13) contains at least one of the following substances: Pb, W, Mo, Ta, Ti, BaSO₄, BaCO₃, BaO, PbCO₃, PbCl₂, PbSO₄, TiO₂ and/or ZnO.

5 10. X-ray detector according to claim 9, characterized in that said material is embedded in a carrier, preferably an epoxy-resin.

11. X-ray detector according to claim 1, characterized in that the sensor units (5) and the processing circuits (4) are arranged in a common layer.

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12. X-ray detector (10) with detector elements (1, 11) arranged in a layer, preferably X-ray detector according to claim 1, comprising a layer of scintillator units (2, 12) disposed in front of a layer of sensor units (5), the scintillator units (2, 12) being separated from each other by a shielding (3, 13) that has a high shielding effectiveness with respect to X-rays and a high reflectivity with respect to photons produced in the scintillator units (2, 12).

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